

2004-2010 Capital Improvement Plans

Overview and Assessment of Information Technology Capital Items for the Capital Planning Advisory Board

**by the
Office of Chief Information Officer
Governor's Office for Technology**

July 2003

Introduction

The Office of Chief Information Officer (CIO), Governor's Office for Technology, submits this report to the Capital Planning Advisory Board (CPAB) as requested and required by 1 KAR 6:020. At the request of the Board, the Office of CIO and the Governor's Office for Technology is assigned the primary responsibility for information technology (IT) capital item review, assessment, prioritization and enterprise ranking. In a June 16, 2003 memo directed to the CIO, the Board requested the CIO identify those information technology items/systems, particularly those proposed to be financed from General Funds, which represent high priority needs for the state and the criteria on which these determinations were based. This report and recommendations present an overview of the work undertaken by the Office of CIO, on request of CPAB, to review information technology capital items submitted by all executive branch state agencies. A detailed status report listing all items reviewed and approved by the Office of CIO is included. The review and prioritization was conducted with input from the IT governance body representing cabinet and agency Chief Information Officers (CIOs) and was formally approved by the CIO Advisory Council. In addition to the prioritization, the CIO includes global findings, recommendations and comments for further consideration by the Board.

Using the evaluation criteria adopted by the CIO Advisory Council in April 2003, each capital item submission was reviewed, presented by the agency CIO, discussed and assessed over the course of several weeks. In addition, a prioritized list of capital IT items, which the Office of CIO has designated to be of high value, is also included. This list was developed based on the review of all high value information technology capital items submitted by state agencies.

Office of Chief Information Officer and Governor's Office for Technology: Roles and Responsibilities

The Chief Information Officer's (CIO) authority and responsibility is vested in KRS 11.511 and is designated as the principal adviser to the Governor and the executive cabinet on information technology policy, including policy on the acquisition and management of information technology and resources within the executive branch. In addition, the CIO is the chief executive of the Governor's Office for Technology.

The CIO is the single point of contact and spokesperson for all matters related to information technology and resources and is granted the governance authority for many related activities. These responsibilities include IT governance and overseeing and managing strategic information technology directions, the enterprise architecture and standards, and maintaining the Commonwealth's technology infrastructure. The Office of CIO is also responsible for identifying IT applications that should be enterprise in scope and ensuring that these applications are not developed independently or duplicated by individual state agencies of the executive branch. The Commonwealth CIO, Governor's Office of Technology

(GOT) and agencies support an enterprise investment approach and cross-agency collaboration. The state has laid the foundation for a true statewide approach to IT with a strong portfolio of shared services including a consolidated data center with production services, statewide electronic mail, Internet connections, and network security protection. The foundation of the infrastructure, the Kentucky Information Highway (KIH), continues to evolve as state government's needs drive the expansion. A priority initiative in 2003 will be the award of the KIH 2 contract for wide-area network communication services.

With many achievements to date, the state's enterprise e-Government initiative continues to produce positive results tied to the theme of "Everyday Government." In the last two years, many more online services from agencies were launched, an electronic payment gateway for processing payments was implemented, and a major milestone occurred when the state awarded a contract to provide Internet portal services for state government. The state's new portal, branded as www.kentucky.gov, brings a new design, advanced technology and online services accessible to all.

Technology security continues to be a critical issue facing the public sector and the Board will no doubt continue to see capital items related to this ever-growing problem. Significant accomplishments in the last biennium include infrastructure strengthening and adoption of enterprise policies related to IT security. State government and postsecondary institutions rely on information technologies and the Internet to conduct business, manage activities, engage in communications, serve customers and perform scientific research. In some instances, Internet transactions have emerged as the primary channel for citizens and businesses to conduct transactions with state government. While these technologies allow for enormous gains in efficiency, productivity, and communications, they also create new vulnerabilities to those who would do us harm. GOT and other agencies have made significant investments in both technology and skilled resources to protect information assets.

The management of criminal justice information and sharing data across a broad set of state, local and federal jurisdictions is a daunting and challenging task. The scope of integration necessary is complex and expected to take several years to accomplish. As specified under KRS 17.131, the CIO serves as the chair of the Unified Criminal Justice Information System (UCJIS) Committee. Under the auspices of the Criminal Justice Council, this committee provides oversight for the design, implementation, and maintenance of the UCJIS effort. Furthermore, the CIO is a member of the Center for Excellence in Government/EMPOWER Kentucky Steering Team, the Electronic Services Executive Committee, Connectkentucky Steering Committee, Distance Learning Advisory Committee and other state bodies supporting the use of information technology to enable excellence in government services.

Information technology is a significant contributing factor to the success of state strategies, improved operational efficiencies and more effective self-service delivery to citizens. Despite the recent economic downturns and state budget fiscal constraints, it is obvious from all indicators that the information technology sector is still the primary engine fueling the national economy.

Overview of the 2004-2010 Planning Framework

The primary role of information technology is to support and enable the business objectives of agencies and support their efforts to provide cost effective services to the citizens of the Commonwealth. Many citizens now expect state government to deliver services comparable to their experience as a consumer in the marketplace. Meeting this expectation requires continued investment in information technology to deliver services electronically.

As another element of the planning framework, and as in past planning cycles, agencies were instructed to focus on the following guiding principles outlined in the Commonwealth's Strategic Information Technology Plan, including their alignment and progress with five principles:

- View technology investments from an enterprise perspective
- Support the business objectives of the Commonwealth government
- Conduct Commonwealth business electronically
- Treat information as a strategic resource
- Ensure electronic access to information and services while maintaining privacy

The principles are key statements of direction related to information technology and its ability to serve as an enabler to meet the needs and goals of state government. The principles guide the IT architectural direction for the Commonwealth, which is the foundation for appropriate investment and deployment of IT. The key principle is the enterprise view of technology, which helps guide policy decisions and technology investments under the umbrella of the common good. These guiding principles are intended to provide an environment in which the Commonwealth may achieve its objectives related to improving the efficiency of government operations and achieving excellence in customer service. Since the adoption of these principles, agencies have a greater understanding that information technology investment decisions must be driven by business goals of the agency.

Summary Review of Capital IT Improvement Plans

For the 2004-2010 capital planning cycle, a total of 145 IT capital items/systems were contained within capital improvement plans submitted by state agencies. The Office of CIO has no oversight authority for information technology initiatives in the legislative and judicial branches as stipulated in KRS 11.509. The Office of CIO also reviewed all state agency capital equipment submissions to determine appropriate categorization of items. Furthermore, the Office of CIO conducted a high-level review on all capital IT and equipment submissions from postsecondary institutions for the purpose of validating the items in the correct category. The total budget request of state agency capital items submitted represents an estimated request of \$560 million in the 2004-2010 cycle. In a change from prior planning cycle, requests for IT items/systems were submitted for all biennium, although more than half were submitted for the 2004-06 biennium.

For the review and assessment needs of the Board, the primary focus of this report is items submitted by executive branch state agencies in the 2004-2006 biennium only. As stated above, 79 qualified capital items/systems were submitted by state agencies, with a total planned budget request for FB 2004-2006 of \$336,378,000.

Impact of the Revised IT System Definition

As stated in prior biennial reports to the Board, the Office of CIO was concerned about application of a traditional capital construction definition to information technology items and systems. With a definition that included only hardware, it was clear the CIO and the Board were only reviewing a portion of the planned expenditures to deploy the total system and not reviewing expenditures that included nominal hardware investments, but may have been significant IT systems. The Commonwealth CIO recommended a broader definition which would encompass all cost elements of an IT system such as software, professional services, system integration and digital data. With the adoption of a GOT emergency regulation and the passage of HB 43 by the 2002 General Assembly, the system definition was revised as necessary to reflect all appropriate cost elements. These costs reveal the initial capital

outlay necessary for successful system deployment. The revised and expanded definition was used by agencies in developing the 2004-2010 capital improvement plans. As anticipated with the revised definition, the total number of IT capital items increased significantly from the prior planning cycle. The Office of CIO and CIO Advisory Council had 53% more items to review and prioritize. Of the 79 items submitted in the first biennium, 45 would be characterized as systems with funding requests with non-hardware cost elements that qualify them as capital submissions under the new definition.

Capital Item Review and High Value Designation

The Office of CIO's review of capital information technology items/systems was conducted within the broader context of the enterprise view, while examining the purpose and overall agency needs. The intent of the high value designation is not to reprioritize every project submitted by the agencies, but rather to highlight projects which should be considered strategically important to supporting critical service and program needs of agencies. In addition, it is important to advance the information infrastructure in the Commonwealth under the accepted architectural direction. The approach used for plan review and assessment was similar to the previous planning cycles, however the criteria applied continues to be refined to reflect changing priorities.

During meetings of the CIO Advisory Council, each agency presented their capital item submissions and responded to questions from the CIO and others. A summary report describing each capital item was prepared for each member. With this approach, the agencies clearly understood the rationale, requirements and enterprise impact of agency requests. This process facilitates the consensus approach to high value designation and subsequent priority ranking. The submissions were grouped into the five review categories listed below and evaluated against criteria. The selection of high value capital items for the 2004-2010 planning cycle was based on association with one or more of the following attributes:

- Maintenance, protection or security of existing information infrastructure and applications supporting critical functions of state government
- Direct life, safety or health related project
- Statewide importance or impact for new infrastructure growth
- Improvement to a business process resulting in substantial cost savings, operational efficiencies or revenue generation
- Exemplary or innovative project which supports multi-agency functions or may become a model for transfer to other agencies

For state agencies, 37 IT capital items were designated as high value in using the criteria listed above. Several items had an association with at least three of the criteria. Information technology and equipment submissions from the postsecondary institutions were reviewed by the Office of CIO, however, the Council on Postsecondary Education (CPE) assumed responsibility for review of institutional items. These items, representing a planned investment of \$260,000,000 in state general funds, restricted, road and federal funds are identified with high value (HV) designations in the report. The total items submitted to the CPAB by state agencies and by the Office of CIO represents a substantial increase in total funding requested and an increase of 19 in the number of high value items selected in the previous planning cycle. For the 2004-06 biennium, several capital projects are pooled in cross-agency initiatives, and certain submissions from the Office of CIO and the Justice Cabinet are linked to a statewide project supporting a unified criminal justice system. These items were evaluated, ranked as a group, and combined in a single submission.

Setting Priorities: High Value Capital Items

At the request of the Capital Planning Advisory Board, the Office of CIO assumes responsibility for prioritizing the high value capital equipment items and systems proposed for funding with general funds (state cash or state bonds). The 37 high value capital items, were further reviewed, discussed and prioritized. The total of the high value priority ranking represents a funding request of \$155,056,000 from executive branch state agencies. The priority ranking report is included as an attachment to this report.

The high value prioritization was based on three major factors:

- Alignment with the high value attributes as outlined in this report, with a higher ranking assigned for items with multiple attributes;
- The ability to improve or expand services to Kentucky's citizens or constituent groups; and
- Maintenance and/or expansion of the enterprise infrastructure necessary to advance Kentucky and its ability to compete in the new economy.

These items were selected due to their support for the stated strategic direction and vision for the Commonwealth, advancing public safety, life and health initiatives, infrastructure needs to support and protect the business of agencies, and enhanced delivery of state services.

Explanatory Comments on the Priority Ranking

For the 2004-2006 biennium of the planning cycle, the final priority ranking of all high value information technology items reflects an emphasis on advancing the unification and interoperability of criminal justice systems, the maintenance and protection of the major legacy systems and infrastructure, and finally the need to replace or upgrade the installed base of technology. During the prioritization process, agency specific items, even for infrastructure enhancement, were not given the same weight as enterprise projects. However, it must be understood that these requests are very important and certainly worthy of funding.

In the public safety and law enforcement sector, Kentucky's efforts mirror state and national trends of significant financial investments in integrated justice systems. Kentucky has been identified as a national model for project management in the area because of the governance structure and cooperation among the branches of government and local jurisdictions. The highest ranked priority item represents a common grouping which includes the base UCJIS project, under the authority of the CIO, and requests for systems that are critical components for criminal justice data sharing.

Because of the lack of funding in the previous biennium, protecting the investment in legacy systems remains a priority. As defined, a legacy system has certain characteristics and may include one or more of the following:

- Utilize previous generations of hardware or software
- Often utilize older technology, architecture, or application construction techniques
- Nearing or exceeding the end of their useful or expected life
- Hardware or software operating systems are no longer supported or enhanced by the vendor

There are several drawbacks and concerns that arise when mission- or business-critical operations are supported or managed by legacy systems: anything other than minor changes or enhancements are cumbersome and difficult to complete successfully; finding experienced

staff to work on the systems becomes difficult to locate and costly to obtain; frequent changes to legacy systems often jeopardize reliability and stability and; most often end users are not able to access data without assistance or intervention from technical IT staff.

Comments and Recommendations

1. Increase the Reporting Threshold for IT Systems

With the new and expanded definition of an IT system, the dollar threshold for the reporting of capital IT systems needs to be revisited and revised as necessary to reflect the desired planning and review intent of both the Board and the Office of CIO. The Commonwealth CIO recommends the threshold for reporting IT systems as capital items be raised to \$1 million.

2. Consider Funding Pool Approach for IT Items

The Commonwealth CIO is again submitting for consideration a funding pool concept for IT items/systems. The Board has long recognized pools for funding upgrades to capital construction projects. Many information technology items are infrastructure and require a significant maintenance and replacement investment. Particularly in the area of major system replacements and refresh, it may be advisable for agencies and institutions to have a funding pool option for related IT items. The pool approach is not intended to fund operating costs, but replacement and/or upgrades to IT capital items/systems.

After initial capital funding, it is critical adequate funding is available for maintenance, upgrades and replacement. Although not defined today as an IT capital item in the planning process, the continued maintenance and software enhancements to enterprise systems represent multi-million dollar annual expenditures by state agencies. Regardless of the methodology used, IT analysts agree the costs associated with managing systems, upgrading software and supporting users is considerably higher than the capital outlay. These recurring investments will certainly exceed the initial capital expense and may require creative ways to fund IT from sources other than traditional appropriations.

The Commonwealth CIO requests the Board consider the maintenance "pool" option for IT capital items that have either similar characteristics (e.g. telephone systems) or require significant maintenance dollars.

3. The Security Imperative: Protecting Commonwealth Assets from Disaster

Ironically, the final version of the Commonwealth CIO report for the 2002-2008 planning cycle was submitted to the Board on *September 10, 2001*. Our world and sense of security has changed dramatically since then. Fortunately, GOT and state government have not had to respond to this question: Could the state's data center recover from a major disaster and resume supporting the critical business of state agencies? State government relies on information technologies and networks to conduct business, manage activities, engage in communications and serve customers. While these technologies allow for enormous gains in efficiency, productivity, and communications, they also create new vulnerabilities to those who would do us harm. A serious security problem confronts all state agencies today.

GOT and other agencies have made significant investments in both technology and skilled resources to protect agency assets. Audits have revealed a need for increasing security protection in terms of both the physical and logical controls. This includes a substantial investment necessary to provide network redundancy, recover systems and data in the event of a disaster. GOT and other state government agencies are at risk and must be proactive in security investments.

Recommendation: Investments in IT security and disaster recovery should receive high priority by the Board during its deliberations. All capital systems must include a security component and the funding request to successfully deploy the solution.